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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,405	02/05/2002	Noriaki Ikenaga	Q68355	4115
23373	7590	03/01/2004	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			CROWELL, ANNA M.	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/062,405	<b>Applicant(s)</b> IKENAGA ET AL.	
	<b>Examiner</b> Michelle Crowell	<b>Art Unit</b> 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on February 5, 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 1-4, 8 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-7 and 10-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-13 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>02/02 &amp; 08/02</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-4, drawn to a method, classified in class 427, subclass 569.
  - II. Claims 5-13, drawn to an apparatus, classified in class 118, subclass 723r.
2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the apparatus as claimed can be used to practice another and materially different process, such as etching.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. This application contains claims directed to the following patentably distinct species of the claimed invention:

Species I      -Figure 2

Species II     -Figure 5

Species III    -Figure 8

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Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 5, 7, and 13 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

5. During a telephone conversation with Mr. Raja Saliba on December 2, 2003 a provisional election was made without traverse to prosecute the invention of Group II, Species III-Figure 8, claims 5-7 and 10-13. Affirmation of this election must be made by applicant in replying to this

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Office action. Claims 1-4 and 8-9 were withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

#### *Claim Objections*

7. Claim 11 is objected to because of the following informalities: Claim 11 recites "said magnetic generating unit"; however, it should be "said magnetic **field** generating unit".

Appropriate correction is required.

#### *Claim Rejections - 35 USC § 112*

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 5-7 and 10-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 5 recites the limitation, "an interior side surface layer of the container received in the reception chamber is modified into a material that is not permeable by carbon dioxide gas and oxygen or a material that hard to be permeated by carbon dioxide gas and oxygen". It is unclear what is meant by the term "modified". For example, a surface can be modified by a chemical reaction (such as chemical vapor deposition, etching) or a physical reaction (such as sputtering).

*Claim Rejections - 35 USC § 103*

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 5-7, 10, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plester (WO 95/22413) in view of Leung (U.S. 5,558,718).

Referring to Figures 1 and 2, page 8, line 19-page 9, line 12, and page 10, line 2-page 13,

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line 17, Plester discloses an apparatus for modifying a surface of a container made of a polymeric compound comprising: a reception chamber 1 adapted for receiving the container 2 while keeping airtightness; a vacuum pump for evacuating the reception chamber 1 (pg 11, line 35-page 12, line 2); a plasma generating unit 6 for generating plasma in the reception chamber 1 (pg 10, lines 11-13); an electrode 3 adapted for being inserted into the container 2 received in the reception chamber 1 (pg 10, lines 11-16); and a high voltage power source 6 for applying high voltage to the electrode (pg 10, lines 11-16); wherein an interior side surface layer of the container received in the reception chamber is modified into a material that is not permeable (pg. 9, lines 3-12, pg. 13, lines 4-17, and claims 28-29).

Regarding the claim limitation of a material that is not permeable by **carbon dioxide gas and oxygen** or a material that is hard to be permeated by **carbon dioxide gas and oxygen**, it should be noted that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Thus, since the interior side surface layer of Plester is an inert or impermeable material, the apparatus of Plester is capable of not being permeated by or hard to be permeated by carbon dioxide gas and oxygen.

Plester fails to teach applying high voltage positive pulses.

Referring to column, 3, lines 43-59, column 5, lines 5-32, and column 6, lines 16-35, Leung discloses that it well known in the art to applying high voltage positive pulses to a plasma source in order to preventing overheating and control plasma density (col.3, lines 5-52, col.5, lines 15-16). Thus, it would have been obvious to one of ordinary skill in the art at the time of

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the invention to apply high voltage positive pulses to the electrode of Plester as taught by Leung in order to preventing overheating and control plasma density.

With respect to claim 6, Plester further includes the apparatus having a magnetic field generating unit 36 for generating a magnetic field in the reception chamber 1 (Fig. 2C, pg. 14, lines 22-26).

With respect to claim 7, Plester further includes the apparatus having a gas supply source 4 for supplying gas into the reception chamber 1 (pg. 10, lines 5-8).

With respect to claim 10, Plester further includes the apparatus wherein the high voltage power source 6 also serves as the plasma generating unit 6 (pg 10, lines 11-16).

With respect to claim 13, Plester further includes the apparatus wherein the container 2 made of a polymeric compound such as polyethylene terephthalate (pg. 13, line 3, line 13, claim 11).

13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Plester (WO 95/22413) in view of Leung (U.S. 5,558,718) as applied to claims 5-7, 10, 12, and 13 above, and further in view of Hayashi et al. (U.S. 5,578,130).

The teachings of Plester in view of Leung are discussed above.

Plester in view of Leung fails to explicitly teach a solenoid coil.

Referring to column 6, lines 44-61 and column 8, lines 14-19, Hayashi et al. teaches an apparatus wherein the magnetic field generating unit is a solenoid coil. Solenoid coils are used to apply a magnetic field for enhanced plasma density. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the magnetic field



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generating unit of Plester in view of Leung to be a solenoid coil since it is an equivalent means of applying a magnetic field for enhanced plasma density.

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shimamura '226, Martin '429, Mahoney '351, Kuehnle et al. '412, Laurent et al. '028, Plester '296, and White '620 teach plastic containers having an impermeable inside layer. Ravi '060 and Hans et al. '911 teach diamond like coatings. Goeckner et al. teaches an implantation apparatus using a high voltage pulse source.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Crowell whose telephone number is (571) 272-1432. The examiner can normally be reached on M-F (8:00 - 4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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